

CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
Of America

Vol. XX

DECEMBER, 1948

No. 12

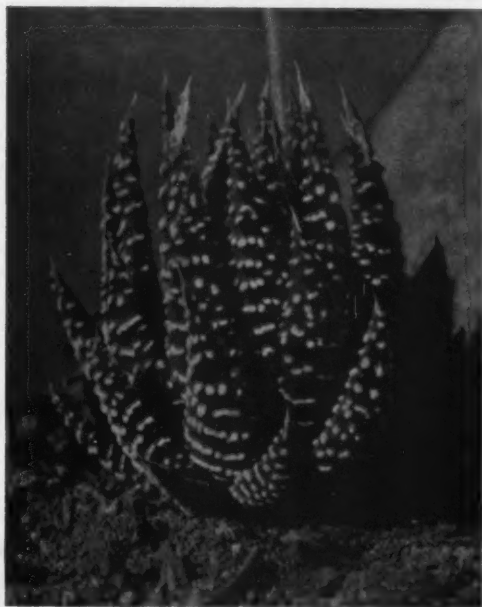
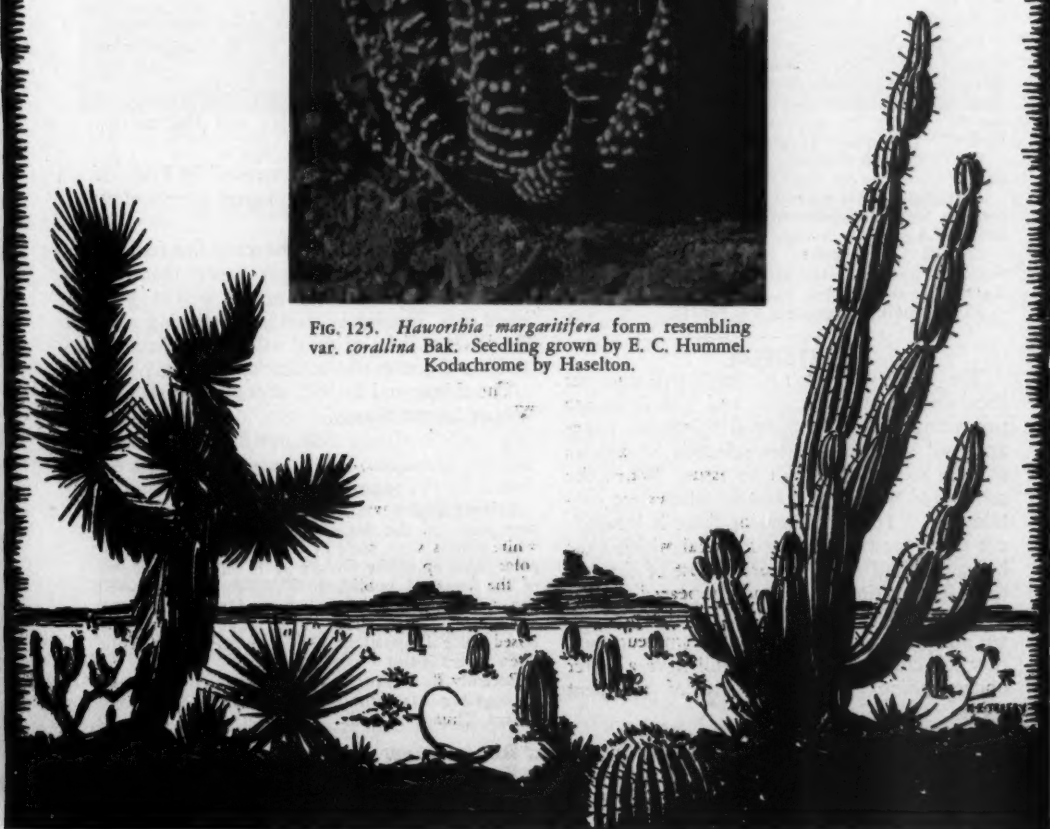


FIG. 125. *Haworthia margaritifera* form resembling
var. *corallina* Bak. Seedling grown by E. C. Hummel.
Kodachrome by Haselton.



CACTUS AND SUCCULENT JOURNAL

Published and Owned by the Cactus and Succulent Society of America, Inc., Box 101, Pasadena 16, California. A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. U.S.A. and Latin Am. \$3.00. Foreign \$3.50 per year by international money order. Membership in the Cactus Society free with subscription. Mail application to SCOTT HASELTON, Editor, Box 101, Pasadena 16, Calif. Editorial Staff: THE ENTIRE SOCIETY. Entered as Second Class Matter at Pasadena, Calif., under act of March 3, 1879.

Vol. XX

DECEMBER, 1948

No. 12

A Naturalist's Diary on the Mexican West Coast, Part II.....	E. Yale Dawson 177
A Beginner's Collection of Mesembs, Part III.....	Paul Hutchison 181
Collector's Plants.....	W. A. Pirtle 182
New Species from Peru.....	John Akers 184
Greetings from Mexico.....	C. Schmoll 186
Cereusly Speaking.....	John E. C. Rodgers 187
Spine Chats.....	Ladislaus Cutak 189

YOUR MEMBERSHIP AND SUBSCRIPTION HAS EXPIRED WITH THIS ISSUE OF THE JOURNAL

—If the envelope containing this issue is addressed in red. Please do not delay. Address an envelope to the editor, Scott E. Haselton, Box 101, Pasadena, California, and enclose your check or money-order for \$3.00 (Foreign, except Latin America, \$3.50). We are not yet increasing the cost of the JOURNAL, although to cover its costs, it should be raised to \$5.00. If all members renew promptly at the old rate we will carry on another year, hoping that costs will return to a healthier level in 1949.

Foreign subscriptions are being sent in from all countries. We learn that in England "Persons are allowed to remit funds to the United States for the JOURNAL and single copies of scientific books providing they apply for permission through their local banker." This applies to other foreign countries.

W. T. Neale & Company, Franklin Road, Durrington, Worthing, is our English representative.

Australian subscriptions are also being received through local representatives of The Turner Subscription Agency, 30 Irving Place, New York 3, N. Y.

Canadian subscriptions are also being received through local representatives of Moore-Cottrell Agency, North Cohocton, N. Y.

Please mail in your renewal NOW.

EDITORIAL

The next issue of the JOURNAL will start our third decade of publication and with it we are presenting for your approval thirty-two pages arranged so that a better selection of articles may be contained within an issue. When the serials and the timely scientific articles are contained in a 16-page magazine there is insufficient space for the amateur material which must be emphasized in the future. Most of the cultural information has already appeared in past issues of the JOURNAL and, to avoid repetition, we are preparing a booklet for amateurs and new subscribers so that they will have a better understanding in the growing of succulent plants.

(Index for Vol. XX will be included in the next issue. Do not send Journals for binding)

Among the articles planned for the next issues are:

"What Is a Succulent" by Lad Cutak.

"Botanical Photographs of Arizona Cacti" by the well known Proctors of Phoenix, Arizona.

Regular installment of "Blühende Kakteen" through the kind efforts of our translator, Mr. Myron Kinnach.

"Illustrations of New Species of Cacti" published in the Swiss Yearbook. Courtesy of H. Krainz.

Well illustrated articles by John Poindexter: "*Pilocereus polylophus*." "Is the Genus *Morawetzia* Valid?" etc.

"New Ways in Cactology" by Curt Backeberg—a discussion on Marshall's and Backeberg's revisions.

"System of Mesembryanthemaceae" by Prof. G. Schwantes. Translation through the courtesy of Daniel Neumann, Jr.

These are only a few of the many fine features awaiting publication. Longer papers that cannot be contained in the JOURNAL will be published in a "Yearbook" during the coming year. The latter will be of great value to specializing students and scientific institutions.

The Editor and its staff offers to you all Best Wishes for the Season.

SCOTT E. HASELTON.

PROCTORS' PICTURES

Arizona Highways, December, 1948, carries a feature story on the Saguaro of Arizona. Black and white photos show some of its growth habits. A full color close up of the flowers by R. C. Proctor is one of the finest yet published. The February issue will run a story on the culture of the Orchid Cacti and one on the Night Blooming Cereus; with the proposed color illustrations, this will make one of the finest cactus issues.

Recently R. C. Proctor won a prize in the Popular Photography Magazine for his picture of the Orchid Cactus, Thunder Cloud.



FIG. 126. *Pachycereus Pringlei*, Bahia de la Concepcion and Sierra de las Gigantas on the Gulf coast of Baja California. Photo by W. Chas. Swett; courtesy of Allan Hancock Expeditions.

A NATURALIST'S DIARY ON THE MEXICAN WEST COAST

By E. YALE DAWSON

PART II

Thursday, October 17—San Ignacio, Baja California

Misfortune has befallen us. Despite all of our preparations and all of our emergency devisements, at 10 o'clock Sunday morning we were at a dead stop in the middle of the road. Having passed the little one-house rancho Tablón by a few hundred yards, we had heard a click in the bowels of the car, a grinding noise,—and progress had ceased. There was nothing to do but set up camp and to begin dismantling the car; and I'm no mechanic!

La Diligencia (the stage) was late in coming south over the miserable roads and the mothers with children must have been impatient when the driver stopped to help us. Yet, they did not complain, but waited in the hot sun while a mechanical examination was held on our vehicle. A slipping clutch was the diagnosis of the stage driver and he proceeded to demonstrate with the big Lincoln how he could drive us in

without using the clutch. It took me some time to convince him that it could not be a slipping clutch, for we had no power at all, and that some repair was needed on the spot. The children had begun to cry and I sent him on his way while I continued the job. What a hot, dusty, miserable place to pull out a transmission and a clutch, and without experience! The maintenance manual seemed so hazy and complicated. I still hadn't found the trouble by nightfall.

Our friend at Tablón was a kindly and neighborly old fellow who began to bring things to us almost as soon as we had settled in the road near his little house. A pail-full of milk arrived early in the morning, followed by eggs, cheese, water and more milk from time to time. Maxine found it difficult to accept all of these for nothing, so in time forced ten pesos upon him. This he received only under protest and after presenting Maxine with a chicken,—and later three pesos in change.

In the morning I hesitantly went on into the clutch, and found a broken disc, a part which I had very nearly brought as a spare from Los Angeles. Now, the one I had intended to buy was the one I needed, and had to get.

No more traffic was expected on the road, and the nearest communication with Los Angeles was 36 miles away in El Arco. In the absence of any other available aid in the emergency, I decided to walk to the radio-telegraph.

At 10 A.M. I left Maxine in camp and strode out toward the hills to the northeast. The sand seemed a little hard on walking, but there were good stretches now and then, so I thought little of it and walked on for an hour. Over the first hill I saw the next, and the next, then another and another. For two hours the hills seemed endless and then I reached a summit and looked out over what appeared to be twenty miles of desert; the road streaked out through the brush and up a distant slope. It was hot; my feet were hot, and I had gone but eight miles. I changed socks and felt the sore spots appearing,—not bad, but a little concerning when I looked into the distance and estimated 40,000 paces yet to go! I sipped on my pint of water and tried to eat a little, but it was too hot, and too dry. Two hours more it took to cross that blistering plain. The lizards scarcely moved as I walked by; dead snakes in the road; gnats in the arroyos; no breeze even to move the frail creosote bushes. My knapsack bothered me and the slap-slap of the water in my canteen heightened my thirst. I counted paces and distances between which I could look forward to the next sip of the rationed water, and each time they seemed farther apart.

Half way,—half way,—had I come half way? Not yet to our old camp,—2 o'clock,—sweating,—then for a moment a tiny whirl-wind and an instant's respite from the still, hot, oppressive air, the heat of sand, rocks and brush under a desert sun. My stomach began to pain and the saliva to get frothy. Slowly I pulled up another hill and sought shade at our old camp of three days ago. I found only streaks and whisps of shadow from the flimsy ocotillos and was too exhausted to go on. I couldn't rest for the tormenting gnats, and when I tried to rise, tired muscles tensed and my legs stiffened with the paralysis of cramp. I fell back on the ground. In time I managed to get to my feet only to be overcome with nausea and dizziness. I fell on all fours and vomited in the dust of the road.

By sundown there seemed no hope that a car would pass, and I was still staggering through the sand and over the rocks on the 28th mile, wondering how much farther I could go, how often I might sip the water,—stuffing things under my belt to replace the shrinking stomach that wouldn't accept food. There was no moon

and my little flashlight blinked lonesomely in the darkness. The giant cacti and yuccas were ghostly, and now and then a strange shape made my tired nerves tingle. I had been sitting down each hour or so, during the day, but each time it was more difficult to rise and progress on the enlarging blisters. For the last twelve miles I merely stopped and leaned over on my knees when near exhaustion and then went on in the darkness. Thirst and hunger had wilted me and it seemed at each pace that I could not go another. The hills closed around me and I went up over rocks. The heel of my boot came off in the dark and then I limped and staggered the more. Finally the moon rose, and at long last, the dark shadows of little shacks stood out on the mountain before me in the moonlight. Hoarsely I cried out to myself "I have found El Arco."

The vomiting had closed the Eustachian Tube to my left ear and in arousing a townsman I discovered that I could hardly hear my own speech, nor could he understand me very well, so dry and rasping had my voice become. He took me to the "restaran," awakened the proprietress and presently I slumped down on a bench to await the coffee. I have never drunk so much coffee in my life.

My bed was a rawhide cot with cardboard mattress and a blanket. I was too exhausted to sleep but fitfully, and through the rest of the night a rat gnawed the floor under my head.

* * *

Two days later Maxine and I were in San Ignacio. An ancient truck had creaked into El Arco from Calmallí, bound for the "city." There wasn't a whole tire on the car; every one had been fashioned from old, blown casings by means of riveted sections. It was a long, slow trip, but nothing like walking it! and what a joy when we did get to town. At a casa de huespedes near the plaza we found a fine, clean room, a real bed, toilets, baths, and three meals a day for two at seventeen pesos. Now we vegetate a while and enjoy the rural life of the pleasant little town.

Today I went out again to Tablón to improvise a clutch by putting in a Dodge passenger car disc. It worked, faultily, but enough to ease the truck 45 miles into town. Now the truck is torn down again out in the "chicken yard" waiting for the part to come down the long, uncertain way by stage.

Wednesday, October 23—San Ignacio, Baja California

After ten days this place is not so exciting. Life is slow and tired. Meals are ample, but getting monotonous: always the fried beans, the tortillas, the same strong coffee, the same messed eggs, the same four cooked prunes for dessert,—never three or five.



FIG. 127. *Machaerocereus gummosus* in its typical thicket-habit on the Desierto de Viscaíno. Photo by W. Chas. Swett; courtesy Allan Hancock Expeditions.

Yesterday the boredom broke briefly with a new movie attraction, but the theatre is a stifling place, alive with bats which sweep across the screen in the wierdest manner.

Our laundry is done by an old woman who lives with a giant hog in a little shantly behind the casa de huspedes. She also furnishes the piped water which she carries in buckets from the irrigating ditch, up a flight of stairs to a high tank from which it flows to the showers and sinks.

Our principle physical activity has been the collecting of lizards and insects of which we have taken hundreds. Otherwise, the expedition collecting has been sterile and the delay has caused us to miss one of the best low tides of the season.

According to our most recent information we should expect our clutch to come in by stage on Saturday or Sunday.

This morning we were out by the spring collecting lizards and water insects when a delapidated Ford touring car came up from the south, the radiator spouting steam like a geyser. It halted at the irrigating ditch and while the car cooled off I talked with the driver about car troubles in general. When my own problems and the lack of a clutch came into the conversa-

tion the man hesitated, frowned, scratched his head, thought a minute and then had a big fat lady with three kids move from the back seat while he rummaged about in the debris of tools, rope, lunch-boxes and dirt on the floor. Finally he came up with a worn and tattered package which he held out to me with the quierly, "Is this yours." It was our clutch!

Thursday, October 24—Mulegé, Baja California

We finally pulled out of San Ignacio this morning to enjoy the novelty of being on the move. My nerves took a beating all morning, though, for confidence in my own mechanical work was very slight and I feared constantly that some error in assembly of the power-transfer system might be demonstrated by another breakdown. By nightfall I began to feel eligible for the union.

Santa Rosalia is grimmer and more degenerate if possible than a dozen years ago. We regretted having to spend even two hours there. Tonight we are in a beautiful little flowering natural park by the Mulegé road, wonderfully green and inhabited by countless millions of biting gnats. We hardly got our dinner eaten at all, for though we fanned them away frantically, they

managed to fly by scores into the food and get stuck.

When I was here before it had not rained for three years; even the cacti were wilted, the *Lophocerei* so badly that the hairy columns had sagged and bent double. Now, with one of the heaviest rains in years just past the cacti are in wonderful growth. The *Cochemieas* are all in red fruit. What a sight to see this desert so green and flowering after knowing how morbidly desolate it can be!

It is getting dark. The moths should be abundant tonight.

Sunday, October 27—San Jose de Comondú, Baja California

I've neglected writing, but the fact is we've had some pretty busy times, and evenings have largely been spent in battling bugs. Night before last was heavenly beautiful beside the sea at Bahía de la Concepcion, but the mosquitos were so bad we couldn't sleep a wink, and we had to look at the lovely stars all night! Gnats are ever abundant, and collecting lizards or butterflies is a difficult job, considering that while one is stalking a specimen the gnats are bee-lining it for the inside of our ears. It seems as if they always head for the ear and fly right inside, driving one slightly crazy for the minute before extraction.

The last two days on the road have been a continual fight against rocks. What is known here as "caminos de pura piedra" lies between Mulegé and Comondú. In the last 12 years the roads have become infinitely worse, so bad in fact after this last storm, that it is most remarkable that a car can be forced over them at all. Only a vehicle with four driving wheels can negotiate the boulevard this season. The indomitable stage even broke a pinon gear and the passengers had to walk out. We continually use all our driving wheels and the lowest gear to pull through arroyos and over mountains where no speck of soil remains,—only pure, rough rock. Sometimes we have spent an hour and a half in going four miles,—a little slower than walking, and in one stretch of twelve miles we used four gallons of gasoline. Three miles to the gallon at 45¢ per gallon doesn't help our budget.

Though I had little opportunity to watch for cacti while driving, the frequent stops to rest permitted us to enjoy the remarkable flowering greenery of the desert and to see the cacti and other desert plants in a period of frantic growth, brilliantly accented by the riotous color of the scarlet coral vines. In the thickets I found a slender vineing *Opuntia* which must be an undescribed species. *Peniocereus Johnstonii* turned up in a strange, rocky habitat not far from where we found the amazingly long-spined *Ferocactus rectispinus*. One spine measured $12\frac{3}{4}$ inches! *Lemaireocereus Thurberi* grows in magnificent

stands of giant plants. Upon the mesa above Comondú, just at sundown, we encountered *Opuntia ciribe* with its white, glistening spines so reminiscent of *O. Bigelovii*.

When we came to the dark rim of the mesa and looked down into the quiet, palm-choked canyon which is Comondú, we felt that indeed the early explorers must have looked with joy upon the scene. Even to us, this quiet town with its candle lights was an oasis of rest and recuperation.

Thursday, October 31—La Paz, Baja California

The first morning in La Paz finds me a bit "woozy." The diarrhea finally hit me and last night I had a tussle with a flea and a mosquito.

After a cooling, cleaning rain on Sunday in Comondú we had started across the dreary Magdalena Plains which gave us few either beautiful or interesting views in the greater part of 235 miles. We encountered several areas where cloudbursts of the previous night had created lakes of the plain so that for miles we drove in and out of water, the four wheels driving and plowing great furrows as deep as our hubs.

Out on the plain not far below Comondú we found the "creeping devil" (*Machaerocereus eruca*), and this, again, was an unforgettable sight. Maxine was amazed at these great, creeping, caterpillar cacti. It was a rare sight to see them in flower and fruit. A little farther on the vegetation began to appear thin and emaciated, and then for over a hundred miles nearly everything was dead. Even nine tenths of the giant cacti were dead and everything showed the terrible effects of prolonged, unendurable drought.

Down at the isthmus we finally turned away from the beach and the plains we had followed so far to cross to La Paz. Almost immediately in climbing the foothills the dismal plain changed into a green, subtropical brush-forest, dense with brilliant flowers. Butterflies were swarming and thousands of them were crossing the road to the southwest, all impelled by a strange urge to move in the same direction.

New cacti suddenly came into view. *Pachycereus pectin-aboriginum* with its huge, yellow-spined fruits became a conspicuous part of the vegetation; *Wilcoxia* became apparent on account of the brilliant red fruits; *Pereskioopsis Porteri* twined around the limbs of the Acacias and the "Mams" and *Echinocerei* appeared in abundance.

La Paz has grown rapidly and become a little city. Fine farms and modern buildings are rising continually and the waterfront has changed by the growth of the big *Ficus* trees to a very attractive avenue. Ice cream parlors and modern drug stores are here, and the Hotel Perlas is the last word in luxury for a place so remote as this. The tourists have found it, and with the air line and new fishing grounds to attract them, they are coming. (To be continued)

A Beginner's Collection of Mesembs.

By PAUL HUTCHISON

PART III

Nearly all of my 32 species multiplied and formed clusters of from two to four pairs of leaves. I have seen a single plant of *L. bella* with ten pairs of leaves. I am beginning to suspect that the group similar to *L. pseudotruncatella* does not form clusters, as this plant has maintained its bachelorhood for five years in my collection, and similar extremely conical forms have behaved likewise.

I was given a cutting of a plant which I thought must be related to *Lithops* because of its shape. However, it was green, whereas most *Lithops* are brilliantly colored. Furthermore, it grew into a dense cluster which formed a little mound, this I knew because I had seen the parent plant. At the University of California Botanical Gardens, I discovered a whole row of plants similar to these which showed a great deal of variety in markings, shape and habit. They were *Conophytums*. It has always been a disappointment to me that this charming group has not been more readily available to amateurs in this country. They are easily grown, multiply rapidly, bloom readily and take little room. Many will take unusual weather without a whimper. I sought material on this group for years without avail until I found N. E. Brown's article on them in the British Cactus Journal. Later, I found many species described and pictured in "Mesembryanthema" by Brown, Tischer, and Karsten. I have only three named

species now: *C. Meyeri* is really a wonder for at various times of the year it seems to belong to different genera. *C. Pearsonii* is a blue-gray, flat-topped, conical-shaped plant only reaching 1/2-inch in height. I have seven unnamed species now. I was led to believe these plants could only be grown from seed, but have proven this to be false again and again. I have grown every *Conophytum* I have from cuttings rooted in dry sand.

This is an endless story, because there is no end to the pleasure the Mesembs can give. There are other genera which hold all the fascination for me that the four mentioned possess, but unfortunately these are not now readily available. *Gibbaeum*, *Rimaria*, *Argyroderma*, *Ophthal-mophyllum*, *Cheiridopsis* and others are all worthy of study, but not listed by dealers. One or two species are in the trade in this country. Usually little is known of the plants, and there is relatively no recent treatment of all of them. Until it is again possible to import new species from South Africa, I suggest that members write in their experiences on different Mesembs, even thought only a single species is discussed, so that the lore on this group may be shared with other succulent fans. I know that my experiences are probably different from those in other climates, and that possibly the methods and results I have had vary with others. If so let's hear about them.

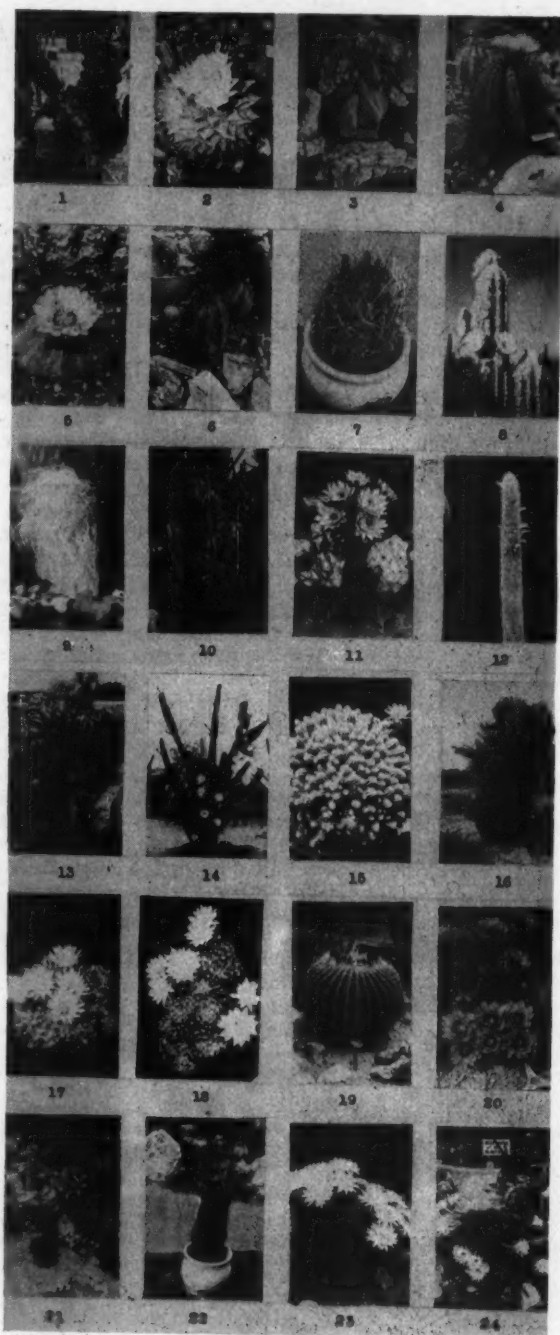
STEMLESS MESEMBS IN MY COLLECTION

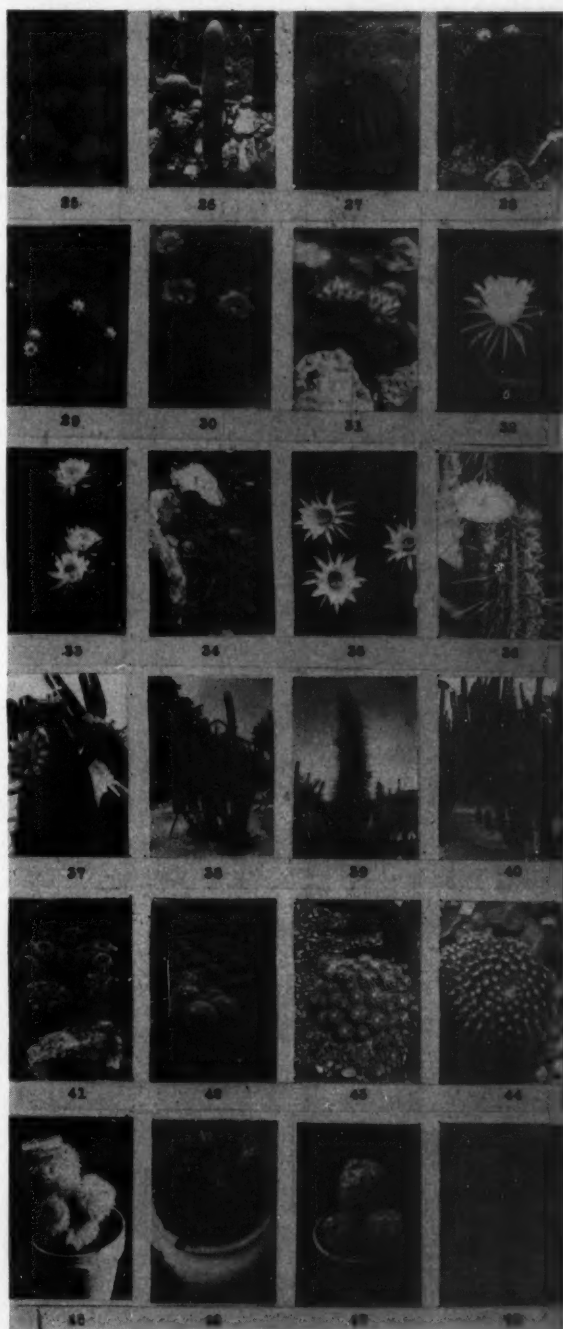
<i>Faucaria</i>	<i>Comptonii</i>	<i>Gibbaeum</i>	<i>Hilmari</i>
<i>longifolia</i>	<i>terricolor</i>	<i>album</i>	<i>Bolusii</i>
<i>tigrina superba</i>	<i>alpina</i>	<i>dispar</i>	<i>Titanopsis</i>
<i>tuberculata</i>	<i>insularis</i>	<i>Lapidaria</i>	<i>calcareae</i>
<i>Duncanii</i>	<i>opalina</i>	<i>margaretae</i>	<i>Schwantesii</i>
<i>albicans</i>	<i>fulviceps</i>	<i>Pleiospilos</i>	<i>setifera</i>
<i>Jamesii</i>	<i>Triebneri</i>	<i>Archeri</i>	<i>Fenestraria</i>
<i>Hoooleae</i>	<i>Lesliei</i>	<i>compactus</i>	<i>aurantiaca</i>
<i>Ryneveldiae</i>	<i>Fulleri</i>	<i>simulans</i>	<i>rhopalophylla</i>
<i>Cheiridopsis</i>	<i>kunjasensis</i>	<i>Nelii</i>	<i>Dinteranthus</i>
<i>peculiaris</i>	<i>pseudotruncatella</i>	<i>dimidiatus</i>	<i>puberulus</i>
<i>Lithops</i>	<i>" pulmonuncula</i>	<i>latispetalus</i>	<i>microspermus</i>
<i>Schwantesii</i>	<i>turbiniiformis</i>	<i>canus</i>	<i>Conophytum</i>
<i>Vallis-Mariae</i>	<i>olivacea</i>	<i>borealis</i>	<i>giftbergensis</i>
<i>rugosa</i>	<i>Lericheand</i>	<i>Fergusoniae</i>	<i>Pearsonii</i>
<i>lactea</i>	<i>Peersii</i>	<i>Purpusii</i>	<i>Meyeri</i>
<i>Herrei</i>	<i>alcampiana</i>	<i>optatus</i>	<i>Imitaria</i>
<i>Ursulae</i>	<i>mickbergensis</i>	<i>sororius</i>	<i>Muri</i>
<i>Framesii</i>	<i>Argyroderma</i>	<i>minor</i>	<i>Rimaria</i>
<i>Marthae</i>	<i>testiculare</i>	<i>Dekenabi</i>	<i>Luckhoffii</i>
<i>umdaensis</i>	<i>octophylla</i>	<i>willowmorensis</i>	<i>Ophthal-mophyllum</i>
<i>karasmontana</i>	<i>scheebieri</i>	<i>magnipunctatus</i>	<i>multipunctatum</i>
<i>Mundtii</i>			<i>verrucosum</i>

Society members are asking where they can purchase cuttings or mature plants. We are glad to picture 48 plants from a retail list from Pirtle's Cactus Garden, Rt. 1, Box 204, Edinburg, Texas.

FIG. 128

- 1 *Acanthocereus horridus*
- 2 *Ariocarpus furfuraceus*
- 3 *Astrophytum myriostigma*
- 4 *Astrophytum ornatum*
- 5 *Astrophytum asterias*
- 6 *Astrophytum capricorne*
- 7 *Ancistrocactus Scheerii*
- 8 *Cephalocereus Palmeri*
- 9 *Cephalocereus senilis*
- 10 *Cereus peruvianus monstrosus cristatus*
- 11 *Cereus Childsii*
- 12 *Cleistocactus Straussii*
- 13 *Cereus caesius hybrid monstrosus*
- 14 *Cereus dayami*
- 15 *Chamaecereus Silvestrii*
- 16 *Consolea rubescens*
- 17 *Coryphantha Runyonii*
- 18 *Dolichothele sphaerica*
- 19 *Enchinocactus Grusonii*
- 20 *Echinocereus angusticeps*
- 21 *Echinocereus enneacanthus*
- 22 *Echinocereus Fitchii*
- 23 *Echinopsis calochlora*
- 24 *Echinopsis tubiflora*





A few specimen plants add interest to any collection. Cuttings from mature plants often flower before they are re-rooted. While you are growing small plants you should have a few mature plants for inspiration!

FIG. 129

- 25 *Escobaria Runyonii*
- 26 *Espostoa lanata*
- 27 *Ferocactus glaucescens*
- 28 *Ferocactus horridus*
- 29 *Gymnocalycium denudatum*
- 30 *Gymnocalycium saglionum*
- 31 *Hamatocactus setispinus*
- 32 *Hylocereus Costaricensis*
- 33 *Harrisia Jusbertii*
- 34 *Homalocephala texensis*
- 35 *Harrisia Bonplandi*
- 36 *Lemaireocereus Hollianus*
- 37 *Lemaireocereus pruinosus*
- 38 *Lemaireocereus stellatus*
- 39 *Lophocereus australis*
- 40 *Lophocereus Schottii monstrosus*
- 41 *Lophophora Williamsii*
- 42 *Mammillaria bocasana*
- 43 *Mammillaria compressa*
- 44 *Mammillaria Eichlamii*
- 45 *Mammillaria Hahniana*
- 46 *Mammillaria Heyderi*
- 47 *Mammillaria plumosa*
- 48 *Mammillaria prolifera*

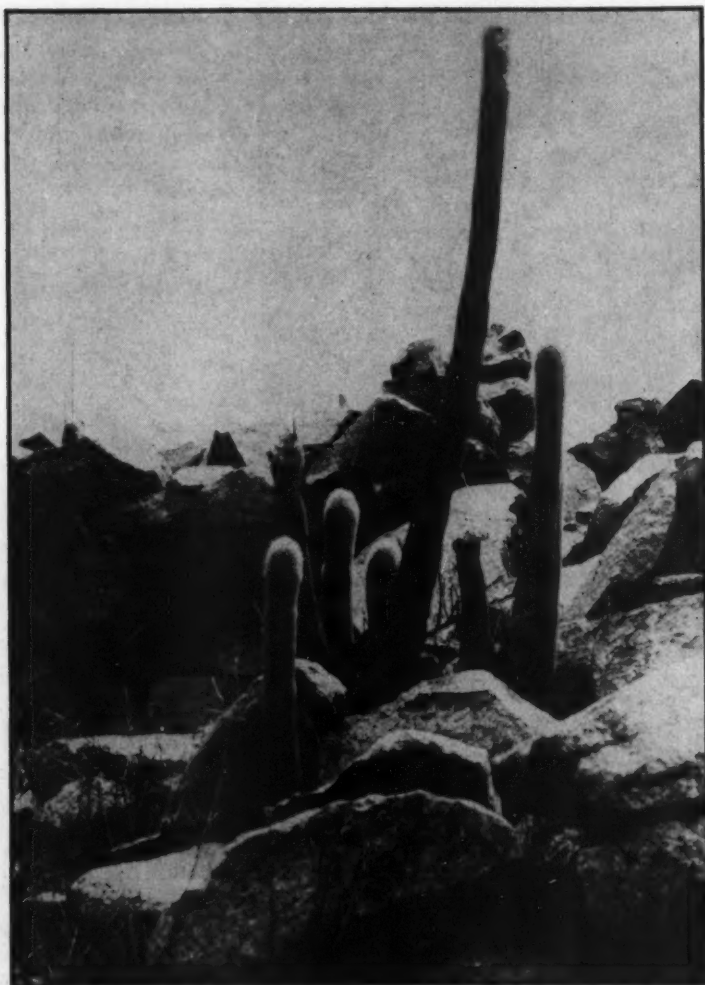


FIG. 130. *Pernvocereus albisetatus* sp. nov. type growing among the pre-Inca ruins on the hills bordering the Santa Eulalia River.

NEW SPECIES FROM PERU

By JOHN AKERS

Pernvocereus albisetatus sp. nov.

Plants columnar, branching from the base to form groups of from 3 to 10 stems; branches slender (6 cm. thick) and up to two meters in height; about 25-26 low ribs with conspicuous, white, felted, approximate (6 to 7 mm. distant) spine cushions; areoles nearly round (5 mm. long, 4 mm. broad, and 3 mm. high) filled with short, white, kinky hairs; about 25 short (13 mm. long), bristle-like, non-pungent spines

which are pale yellow at first but fade rapidly to silver-white; central spines usually lacking, but there may be one fine, somewhat pungent, acicular spine over 1.5 cm. long; epidermis dark green but hidden under the thick growth of bristles and hairs; hair-like bristles 35 to 40 at an areole, white, flexible but brittle, and 1 cm. or more in length; bristles generally emanate from the lower half of the areole; flowers solitary, appearing near the top of the stems, nar-

rowly funnel-form with an expanded rotate limb about 4.5 cm. broad; inner perianth segments variable in color, the type being greenish white to green and the varieties being reddish green to dull magenta; inner segments spatulate, apiculate; outer segments nearly linear, apiculate, greenish to reddish brown and much reflexed; tube medium green shaded with red, about 5 cm. long, and scaly; scales long and narrowly apiculate with numerous, 1 cm. long, white, silky hairs in their axils; the hairs may or may not turn brown with age; ovary dark green scaly and hairy; stamens somewhat exserted and usually in a tight conical bundle; filaments greenish white, slender; anthers oblong, 1 mm. long, creamy white; style exserted, heavy, greenish white; stigma lobes 14, greenish and about 6 mm. long; fruit ellipsoidal, about 3.5 cm. thick and 4.5 cm. long; flower remains brownish, densely white-hairy, and persistent; epidermis salmon shaded rose and having small, yellow, triangular scales 1 to 1.5 cm. distant; 30 or more 1 cm. long, white, kinky hairs emanate from the axils of the scales; hairs tend to be deciduous when the fruit is ripe; pulp in clear, translucent, tasteless globules with black seeds scattered throughout; seeds small, punctate with a dirty-gray hilum; roots thick and woody with loose scaly bark.

Type locality: Hills above the Santa Eulalia River Valley.

Distribution: The same.

This is one of the most attractive species in the genus. In many ways, it resembles the whitish type of *Cleistocactus strausii*. Occasionally, the hairs have a pink tinge, but are usually pure white. The old hairs and bristles gradually turn dark gray, but the new growth is quite handsome. The spines and bristles of the type species are very soft and flexible, and the hand may be passed over the plant without feeling any evidence of spines. This plant is a relatively slow grower and a sparse bloomer, being content to produce only 3 or 4 flowers per year. *Peruvocereus albisetatus* is a very rare cactus, but strange as it seems, a beautiful crested plant has been found.

Peruvocereus albisetatus, sp. nov.

Plantae erectae columnares 1-2 m. altae ramos angustos aggregatos diametro ca. 6 cm. ex basi emitentes; costae 25-26 humiles areolis inter se 6-7 mm. separatis 5 mm. longis 4 mm. latis 3 mm. altis albotomentosis; spina centralis acicularis 12-15 mm. longa vel nulla; spinae laterales ca. 25 tenues flexuosae primo flavidae mox argenteo-albae, setis tenuissimis 35-40 albis flexuosis sed vitreis ca. 1 cm. longis in partem inferiorem areolarum positae; flores solitarii circa apicem ramorum positi anguste infundibuliformes limbo rotato 4-4.5 cm. lato, segmentibus interioribus virido-albis vel rubro-viridibus vel rubro-purpureis

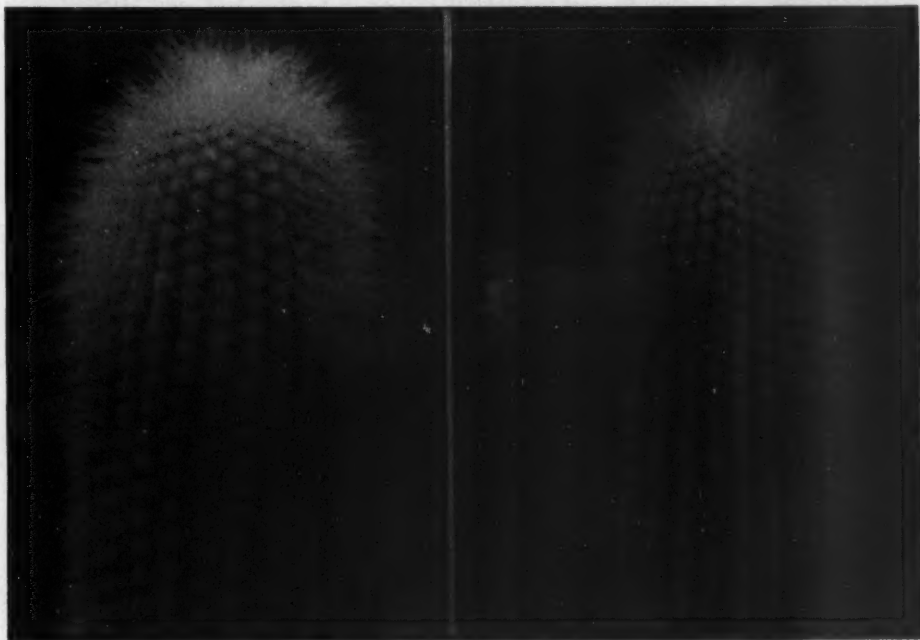


FIG. 131

LEFT: *Peruvocereus albisetatus* sp. nov. type. RIGHT: *Peruvocereus albisetatus* var. *robustus*.

spathulatis apiculatis, segmentibus exterioribus lineari-bus item apiculatis rubro-viridibus vel rubro-brunneis reflexis, tubo viridi ac rubido squamato 5 cm. longo; tuborum squamæ lineares apiculatae in axillis pilos numerosos bombycinos gerentes; stamina breviter exserta, filamentibus virido-albis gricilibus, antheris albis 1 mm. longis; stylus exsertus virido-albus; stigmatium lobis ca. 14 viridescens 5-6 mm. longis; fructus 3.5 cm. latus 4.5 cm. longus flavido-roseus squamatus, squamis triangularibus flavis inter se 1-1.5 mm. separatis in eorum axillis pilosis; semina parva minute punctata; radix robusta lignosa, cortice squamato.

Peruvocereus albisetatus var. *robustus*

Bristles and soft spines somewhat longer than those of the type and may be 19 mm. in length; central spine present, acicular, pungent, yellow brown and about 1.5 cm. long; plant more robust, being about 6.5 cm. in diameter; the coat of bristles and soft spines is more uneven in

length and gives the plant a shaggy look; these bristles are an off-shade of white and are not so attractive as the type; flowers solitary and from the apex of the stems, greenish-magenta; flower tube slightly longer (5.5 cm.); fruit pinkish green with small distant scales.

Type locality and distribution the same as for *Peruvocereus albisetatus*.

While this plant lacks the beauty of the type species due to the off-white, shaggy spines, it is still very attractive. Both plants are distinguished from *Peruvocereus setosus* by the more slender, taller branches, and by the finer and silkier hairs and bristles. Another distinct feature is the conspicuous white spine cushions. The flowers and fruits are also distinct.

We are grateful to Dr. Ira L. Wiggins of Stanford University for the Latin diagnosis.—J. A.

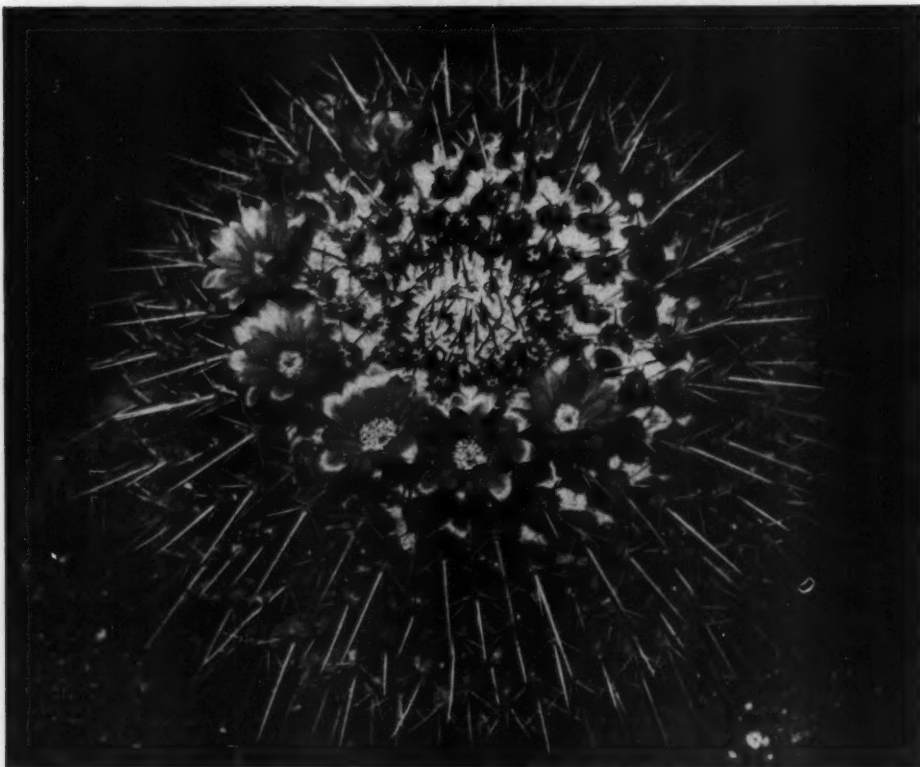


FIG. 132. *Mammillaria Hamiltonboytii* (Bravo) Werd. x 0.1

Members of the Cactus and Succulent Society of America:

Because it is impossible to send personal greetings to all of our many friends we take this opportunity to wish you all a Happy Christmas and a prosperous New Year.

Mrs. C. Schmoll

THE CACTUS AND SUCCULENT JOURNAL OF GREAT BRITAIN

(\$2.50 per year, with membership \$4.25)

New Species published in their October, 1948, issue:

Mammillaria Deliusiana Shurly. Discovered by Fritz Schwarz.

Strombocactus Schwarzii Shurly. Discovered by Fritz Schwarz.

DENVER OFFICERS

Denver Cactus and Succulent Society held its annual meeting October 29, 1948, and the following officers were elected for the year 1948-1949.

Mrs. Julia Willis—President

Mr. Philip Wichern—Vice-President

Miss Muriel Colburn—Secretary

1101 East Dartmouth Avenue, Englewood, Colorado

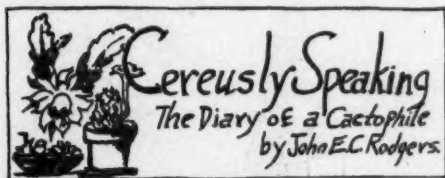
Mr. C. D. Hollingsworth—Treasurer

Mrs. Kai Villien—Librarian

DETROIT SOCIETY

"The Spinal Column," monthly mimeo bulletin of the Detroit Cactus and Succulent Society (\$1 per year, Mrs. Richard Kolasinski, Rt. 1, Richmond, Mich.) contained a real photograph of Wilcoxia on its November cover. A fine study plan is suggested in the following quotation from their bulletin:

"The study period on Crassulas will be what radio announcers would call an 'Audience participation program.' On display will be over 20 species of Crassula most of them named. Some of these will be sold after the study period. There will be prizes for the members who bring (a) The largest Crassula, (b) The most different Crassulas, and (c) Crassulas that are the only ones of their kind at the meeting. Also those having copies of 'Succulents for the Amateur,' please bring them, as well as copies of Johnson's catalog."



The list of cacti and succulents which bloom during winter is limited to a few species of *Rhipsalis*, *Aloe*, *Haworthia*, *Schlumbergera* and the hybrids called the "Christmas Cactus."

The controversy over the true name of the Christmas Cactus is still going on. The "Epiphyllum Handbook" by Haselton calls it *Zygocactus truncatus* while Lex Faux in his article "A comparison of some taxonomic literature on the genus *Schlumbergera* (Lemaire)," pages 83-87 of "The Spine" leads me to agree with him—"... having regard to the habitat of *Z. truncatus* and *Schlumbergera Russelliana*, it is possible that both photographs (page 120 and Plate X, 'Epiphyllum Handbook') referred to represent transitional forms* between the species." Both cactus plants have multiple jointed stems which vary in length from one to three inches—especially true of *S. Gaertneri* and *Russelliana*. *Z. truncatus* has two

teeth-like appendages which stand out like a crab's claw about the jointed stems.

(Forthcoming JOURNALS will have translations of the masses of these discussions published in Kakteen Kunde as far back as 1894.) Ed.

Watson in "Cactus Culture for Amateur," fifth edition, lists ten distinct color combinations ranging from near white to purple, as well as bicolors and tricolors. Mrs. Bakkers, former owner of Knickerbocker Nurseries, lists *S. Gaertneri*, *S. Russelliana*, and *Z. truncatus*, *Z. bicolor* and five others including white, violet, salmon, red, and magenta (which she calls Christmas Cactus). Marshall and Bock in "Cactaceae" list the seven from "Nicholson's Garden Dictionary." I have seen plants that were sold as the ones listed but they were all lost before blooming in spite of being grafted. Most growers do not bother with these. However, I think the owner left them too long without water and in too strong sunlight. So far, I'm not sure about the less common ones. I do have a variegate with broad leaves of cerise, pink and red which stay bright the year around.

Z. truncatus has bloomed for me for 14 years. It is always in bloom between October 19 and December 3 which makes it live up to its name, Thanksgiving Cactus. The flowers are not symmetrical but lop-sided. The Christmas Cactus (*S. Russelliana*) is always in bloom (for 20 years) between December 20 and January 19. The Christmas Cactus can be made to bloom most any time you wish, even in summer if kept dry. However, I have never been able to change the blooming habits of *Zygocactus truncatus*. It blooms on or near Thanksgiving day. *Schlumbergera Gaertneri* is one of the best in my estimation. I got my start in 1936 as a cutting sent to me by mail for identification. It has coarse brown hairs at the ends of the older joints. Blooms for me each year between February 16 and July 23. The gorgeous blood-red wheel-shaped flowers hang in clusters from the branches.

The diseases I've come in contact with are all due to poor growing conditions. Poor drainage and sour soils cause the "leaves" to grow thin and drop whole sections (even ripened woody stems). The remedy is to use the hose and wash out the top soil in the pot and put in new soil, tamped down around the exposed roots. Oil base sprays also cause much grief. The "leaves" absorb the basic oils usually used for scale and cause the plant to die back. Oil kills scale but it will also destroy all of the new growth (always follow spraying directions). Mealy bugs on roots can be eradicated by soaking soil with Volck. Red spider and thrips can be controlled by spraying with a combination of Naptha soap and Blackleaf 40. Too dry air about the plant causes the young stems and buds to drop off. Set on trays of wet gravel. High humidity is the answer to this problem. Yellowish stems mean starvation. A top mulch of sand and manure gently worked into the soil or re-potting will cure this ill. The ills are a challenge—a well-grown plant is a triumph.

The original home of these plants was on the trunks and branches of huge forest trees with an occasional plant found growing on the ground, up to an elevation of 6000 feet in the Organ Mountains* of Brazil. *Z. truncatus* was introduced to English collectors in 1818; *S. Russelliana* in 1839, and *S. Gaertneri* in

*Also quoted from Epiphyllum Handbook, "It may be one of the variations in the genus or a natural hybrid."

*Next issue we will show a botanical photo of the branches of a plant collected by Harry Blossfeld in the Organ Mountains sixty miles from Petropolis, Brazil. Ed.

1884. The soils in these high tree crotches are of decomposed leaves, bird guano, and other organic material; it is rich in nitrogen (source of dark green leaves) and drains quickly but stays moist and open to free circulation of air. This type of soil gives us the key to our own cultural methods for the best results.

The fact that these three plants are prime favorites in window gardens the year around speaks for their adaptability to varied growing methods. Go to any mountaineer's cabin, English cottage's limited window space, rich greenhouse owner's collection, prairie shack, or rancher's house and you'll find at least one of the three is grown as a proud possession. I've seen old plants in wooden tubs which are 50 to 60 years old. The stems were rounded and woody but each one still puts on its annual display.

Grafted plants on *Pereskia* stocks, often form huge umbrellas which produce 750 to 1000 blooms during its month to six weeks of Cinderella existence. The bell-like blooms of the *Schlumbergeras* are beautiful and last from a week to a month if it is cool. *Z. truncatus* flowers are shaped like snap-dragon flowers—zygomorphic describes them scientifically. There are several *Zygocacti* with beautiful foliage, mostly shading from cerise through purple, to red towards the center of the stem. The stems are usually wider than the true "Crabs Claw."

The plant of the month is the Christmas Cactus, which contrary to most people's ideas, does not like too much sun. It comes from the rain forests of South America where it grows in leaf mold and bird guano. Its fan-like shape shows its attempt to adjust itself to these narrow confines of crotches of trees. It grows between 4000 and 6000 feet elevation. In the greenhouse I imitate its natural surroundings by using fresh garden loam which has a good admixture of leaf mold and well decayed manure. I top dress the plants in the fall with sand and decayed manure. In this way they stay in the same pots and soil for several years. Pot sizes do not count only to keep plants upright and for protection. My plants are watered every day after the resting period, from September to time buds appear (usually late October).

As soon as the buds are set, the plants need moisture about the tops, as well as at the roots, to keep the buds from dropping. The thin, thread-like connections seem to lose their ability to nourish the bud if kept too dry. The buds only appear at the ends of well matured sections (though a 3-foot grafted *S. Gaertneri* sets buds back to the joint for me). If the plants are properly drained, the soil will remain porous enough even when wet and admit air to the roots. Slightly acid soil on which moss starts, seems best for my growing conditions.

When grafting Christmas Cacti, it is best to remember that the scion becomes very heavy when fully grown. It is best to use such stout stems as *Opuntia spinosior* or *O. imbricata* according to a local enthusiast who visited a successful grower in Canada in 1935. *Pereskia* stalks are too willowy, and need staking to support the scion.

It is necessary to get vigorous growth during growing season so the plant recuperates after its blooming spree. Most people that grow them around Ohio do not let them rest after the growing season and the new stems do not stop growing. A cool spot where these plants rest best is seldom found in the newer houses without basements and with over heated rooms. It is a toss-up whether the Christmas Cactus can beat the African Violet at present. An encouraging sign, how-

ever, is that a local greenhouse is able to sell to the 5 and 10's 3000-10,000 budded cuttings a year from Indianapolis to Pittsburgh. The public buys—but few plants probably get much beyond the original size when bought.

Next month *Kleinias*. P. of the M. is *Kleinia tomentosa*.

JOHN E. C. RODGERS,
1229 W. 8th St., Lorain, Ohio.



FIG. 133. A branch of the Crab's Claw Cactus which is the more appropriate name for *Zygocactus truncatus*. The plant from which this was taken, was grown by Mrs. Elmer Lewis, North Haverhill, N. H.; it measured 3 ft. across and 18 in. high and had over 300 flowers on October 16. Mrs. Lewis had a nice plant of German Empress also in flower on the same date. After flowering, the plants were placed in a frost-free attic until they showed signs of growth in the spring, then they were brought near a sunny window in the living room. (Haselton photo.)



The genus *Pereskia* is assumed to be the most primitive in the Cactus Family and all of its dozen-and-a-half species look unlike any cactus of popular fancy. Hence, if you fail to recognize a *Pereskia* as a cactus at first glance, you need not be embarrassed, for one scholar in the late seventeenth century thought it resembled a Purslane and ascribed it to *Portulaca* while another called it a *Malus* or Apple. However, once you get acquainted with the genus you will promptly recognize its affinity with Cactus. The plant up for discussion this month is *Pereskia aculeata*, one of the first to be met with by early colonizers of tropical America. It is best described as a climber, for in the American tropics the plant climbs over walls, rocks and trees and is as rampant in growth as the exotic *Bougainvillea*. It can hardly be recommended as a pot plant but will grow nicely where greenhouse facilities are available. The clambering stems will reach the roof and then hang in festoons from the rafters. Though considered an infrequent bloomer, our specimen has produced an abundance of flowers on several occasions during my 21-year incumbency at Shaw's Garden. It blooms late in October and early November and while in flower the strong fragrance of the blossoms can be detected long before you enter the Cactus House. The plant is tolerant of almost any soil and can stand lots of water. Stout stems are frequently used for stocks in grafting. *Zygocacti*, *Schlumbergeras* and *Rhipsalis* seem to prefer it.

Pereskia aculeata is a climbing or rampant shrub with elongating branches which become woody with age and are beset with many long straight spines. The leaves are somewhat fleshy, more or less dropping off during the period of rest. They are short-stalked, elliptical to broadly lanceolate or ovate, tapering at both ends but more so at the apex, up to 10 cm. long by 5.5 cm. wide or smaller, Dusky Yellowish Green on the face, lighter or Forest Green on the underside. Areoles, more or less ovate in outline, contain a pair of short, reflexed, Rosebush-like spines Buffy Citrine in color. On very old stems each areole, in addition to the recurved pair of spines, may exhibit 3 or more brownish acicular spines of variable lengths. The fragrant flowers appear in clusters, and are of a whitish green or yellowish green color, often tinted with pink; the individual petals semi-transparent, oblongish with an acute tip. The numerous stamens form a cup around the white style. The ovary ripens into a small yellowish berry about $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter, which is edible, and because of its resemblance to a fruit of *Ribes* it is sometimes commonly referred to as "Barbadoes Gooseberry." A sport of *P. aculeata*, producing colorful foliage, is sometimes cultivated and better known under the name of *P. Godseffiana*. It is said to possess leaves of crimson, apricot yellow and green color on the face with uniform purplish crimson on the back. We have a plant, supposedly *P. Godseffiana*, but it does not possess the rich colors ascribed to it although this lack may be due to the fact that it is grown in a shaded portion of the house.

Ceropegia Barnesii is the newest species to be recorded from Southern India. It is described by E. A. Bruce and D. Chatterjee in the Kew Bulletin (No. 1,

1948, p. 62). It is a twining plant with a terete, glabrous stem. The leaves are opposite, thin, entire and petiolate. The inflorescence is an axillary umbellate cyme of 3-5 flowers. *Ceropegia Barnesii* can be distinguished from the other Indian *Ceropegias* by its characteristic leaves, which are much larger than those of other species. It is very similar to *C. intermedia* in its coronal structure but differs in having larger flowers with broader corolla lobes.

Iceland is situated in the northern part of the Atlantic Ocean, separated from Greenland by the broad Denmark Strait. It is built up almost entirely of volcanic material. The climate may be characterized as intermediate between temperate and arctic. The summers are relatively cool and the winters, as a rule, mild. The vegetation, according to Grøntved (The Botany of Iceland, vol. 4, part 1, 1942), is divided into 20 types. *Sedum Rosea* and *S. acre* are the most typical species from dry and sunny rock-crevices and rock-ledges. The former is common in all parts, in the lowland as well as the central highland. It is found up to the highest limits of vegetation in Iceland. In rock crevices or under overhanging cliffs and in similar sheltered places it grows rather high and develops luxuriantly; in the open it is usually low of stature and with densely set leaves. It is often cultivated in gardens or planted on the earthen walls or roofs of houses as an ornamental plant. The latter seems to be frequent, even common, in most parts of the lowland. *Sedum villosum* is a typical plant of the flag vegetation on clayey damp soil, in moist gravel and on rocks. *Sedum annuum* generally occurs in crevices and on ledges of the coastal cliffs and is more luxuriant of growth on the bird cliffs, owing to the manuring.

Recently newspapers carried notices of the death of Ex-King Ferdinand of Bulgaria at Coburg at the age of eighty-seven. This former ruler recalls to mind *Agave Ferdinand-Regis*, which was named in his honor by Alwin Berger, late curator of the famous "La Mortola" gardens of Sir Thomas Hanbury at Ventimiglia, Italy, where a representative collection of Magueys was grown. *Agave Ferdinand-Regis* is one of the handsomest of the small kinds, being outclassed only by *A. Victorise-Reginae*. From early youth King Ferdinand had a passion for natural history and was well versed in ornithology, entomology and botany. In 1879 he made a trip to Brazil to study bird-life and upon assuming the throne he gave every encouragement to the study of ornithology in the Balkans. After his abdication, he retired to his estate at Coburg where he devoted most of his time to his private museum and large collection of living birds. A section of his estate was set aside for wild-flowers which the King had either collected himself or had been given to him from every part of the world. In 1927-1928 he made a collecting trip to South America and in 1929 headed an expedition to Victoria Nyanza and the mountains of equatorial Africa.

To all my readers a very CACTACEOUS CHRISTMAS and a SUCCULENT-ABUNDANT NEW YEAR!

MICHAEL DONNELLY CACTUS GARDENS

Rare cacti and succulents. Featuring the Don-Rita Brand. By appointment only.

334 Lowell Street—Daly City, California

MEXICAN CACTI AND OTHER SUCCULENTS

Specially selected and very beautiful

Please ask for free price list or special offer of crests, clusters, and show-plants as well as collections.

FERNANDO SCHMOLL

Cadereyta de Montes, Qro., México

BOOK NOTES

Many books will advance in price on Jan. 1, 1949. Orders must be received before the next announcement if you wish to take advantage of the 1948 prices.

Backeberg's 1934 Catalogue, 40 pgs. with 72 excellent cactus pictures. 50c

ARIZONA HIGHWAYS MAGAZINE—Christmas issue 1947. Contains 27 beautiful cactus and desert plants in color. The two cover pictures 9x12 inches are worth \$5 as framed pictures of cacti. Postpaid 50c.

TWO VOLUMES ON SEDUMS

These two little volumes were published in Sweden in 1936 but are available in this country now for the first time. There are 150 pages well printed with many photographs. Even though one cannot read their language, the pictures are an addition to any library. While they last \$1.75 per set postpaid, foreign \$2.00.

EPIPHYLLUM HANDBOOK by Scott E. Haselton (1946). This first book on Epiphyllums and their hybrids gives their history and parentage as well as the flower parts and how to make descriptions. Complete cultural and propagation information. Explains hybridizing with pictures of all the plants used. Contains 250 pages with 170 photographs and 11 color plates. Price \$3.50, postage U.S.A. 10c, foreign 50c.

BEGINNERS LIST OF "MUST" BOOKS

Cactus for the Amateur—Haselton. Postpaid \$2.60, Foreign \$2.75. Introduction to cacti with advice on starting a collection. Illustrated cultural information. 160 photos and color plate of 110 named cacti.

Succulents for the Amateur—Brown. Postpaid \$2.60, Foreign \$2.75. Introduces one to 800 best succulents with 400 illustrations of named species including a color plate of 75 beautiful succulents.

Succulent Plants—Jacobsen. The revised edition of the most complete book on the other succulents is now available. There are over 300 illustrations with descriptions of 1000 species; mentions as many more in the 293 pages. English edition \$6.50, foreign \$7.00.

Glossary of Succulent Plant Terms—Marshall & Woods. Postpaid \$3.25. Pronunciation of the plant names with illustrations. Botanical terms explained in simple language. This book is necessary for a full enjoyment of cacti and the other succulents.

Study of Cacti—Higgins. Postpaid \$3.00. Cactus names and classification explained. Distribution, uses and cultivation. Description of the main groups with an outline for a quick understanding of their relationship. Culture is dependent on a knowledge of the habitat of the plants.

If an amateur will master the contents of these four small books he will have a general understanding of most of the plants in cultivation and will be able to derive valuable information from even scientific articles. To enjoy ones hobby one must make an earnest effort to learn all one can about the subject.

Please add Sales Tax on California sales

ABBIE GARDEN PRESS

Box 101 — Pasadena 16 — California

COMMERCIAL DEALERS**QUALITY HILL CACTUS HOME**

CACTUS AND SUCCULENTS—RETAIL ONLY

559 Evanston Ave.

Kansas City, Mo.

ALBERT AROZENA NURSERY

WHOLESALE GROWERS CACTI AND SUCCULENTS

1518 E. Rosecrans

Compton, Calif.

CACTUS PETE

CACTI, SUCCULENTS, AND EPIPHYLLUMS

5440 Valley Blvd.

Los Angeles, Calif.

SWANSON CACTUS GARDENS

CACTI AND SUCCULENTS

1201 Gardena Blvd.

Gardena, Calif.

DE WAYNE CACTUS GARDENS

CACTI AND SUCCULENTS—WHOLESALE AND RETAIL

846 Geneva Ave.

San Francisco 12, Calif.

COOLIDGE RARE PLANT GARDENS

"THE JEWELLED CORRIDOR" OF EPIPHYLLUMS.

RETAIL. NO MAIL-ORDERS.

889 N. Foothill Blvd.

Pasadena, Calif.

FITZPATRICK'S CACTUS GARDENS

CACTI AND SUCCULENTS—RETAIL

Rt. 3, Edinburg

Texas

PIRTLES CACTUS GARDEN

CACTI, SUCCULENTS AND SEED—WHOLESALE, RETAIL

Route 1.

Edinburg, Texas

BEAHM GARDENS

EPIPHYLLUMS—WHOLESALE AND RETAIL

2686 Paloma St.

Pasadena 8, Calif.

NEWELL AND WILSON

CACTI—SUCCULENTS—RETAIL, WHOLESALE

Australian customers only

Surrey Hills, E. 10

Victoria, Australia

"LA QUINTA," Fernando Schmoll, owner

SEEDS AND PLANTS—CACTI AND SUCCULENTS

Cadereyta de Montes, Qro.

Mexico

KREJCI GARDENS

CACTI AND SUCCULENTS—WHOLESALE AND RETAIL

10,002 Sharp Ave.

Pacoima, Calif.

JOHN POINDEXTER NURSERY

CACTI AND SUCCULENTS—WHOLESALE AND RETAIL

P. O. Box 391

Carlsbad, Calif.

FRED AND MYRTLE CACTUS GARDENS

CACTI AND SUCCULENTS—WHOLESALE, RETAIL

6521 S. D Street

Tacoma, Wash.

THOMPSON'S SUCCULENTS

SUCCULENTS, DISH GARDENS—RETAIL ONLY

4342 Wawona St.

Los Angeles 41, Calif.

KAGEL CANYON CACTUS AND SUCCULENT GARDENS

CACTI AND SUCCULENTS—WHOLESALE ONLY

11790 Kagel Canyon Rd.

San Fernando, Calif.

DECEMBER SPECIALS

Ariocarpus fissuratus.....	3 1/2"	\$1.00
Ariocarpus trigonus.....	3"	\$1.00
Ariocarpus retusus.....	3"	\$1.00
Ariocarpus Kotschoubeyanus.....	1 1/2"	\$1.00
Obregonia Denegri.....	3"	\$1.00
Encephalocarpus strobiliformis.....	1 1/2"	\$1.00

All six \$5.00 Postpaid

FREE—New Illustrated Catalog No. 1

PIRTLE'S CACTUS GARDEN

Route 1, Box 240-J—Edinburg, Texas

RARE CACTI AND NOVELTIES

Price-list free of charge

FRITZ SCHWARZ

Apartado 347, San Luis Potosi, S.L.P., Mexico

